

Serial No. 09/884,231

Filed: June 19, 2001

AMENDMENTS TO THE CLAIMS

The listing of Claims will replace all prior versions and listings of the Claims in the application:

Listing of Claims

1.-27. (Canceled)

28. (Previously Presented) A method of making a woven spider comprising selecting a non-conducting thread, helically wrapping an electrical conductor around the selected non-conducting thread and weaving the selected non-conducting thread that is wrapped with the electrical conductor into a woven cloth to form a single shed or course of the woven cloth that forms the woven spider.

29. (Previously Presented) The method of claim 28, further comprising leaving a determined length of the selected non-conducting thread that is wrapped with the electrical conductor positioned adjacent to the woven cloth in a determined position so that the selected non-conducting thread that is wrapped with the electrical conductor extends beyond an edge of the woven cloth when the woven cloth is molded and trimmed to a desired shape to form the woven spider.

30. (Previously Presented) The method of claim 28, wherein weaving comprises forming an integral part of the woven cloth that is only the selected non-conducting thread wrapped with the electrical conductor.

31. (Previously Presented) The method of claim 28, wherein weaving comprises positioning the selected non-conducting thread wrapped with the electrical conductor so that the selected non-conducting thread wrapped with the electrical conductor is a flex locus of the woven cloth.

32. (Previously Presented) The method of claim 28, further comprising leaving a determined length of the non-conducting thread that is wrapped with the electrical conductor unwoven and trimming the woven cloth to create a central opening and a desired outer circumference of the woven cloth so that the unwoven determined length of the selected non-conducting thread that is

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wrapped with the electrical conductor extends beyond the desired outer circumference of the woven cloth to readily provide electrical connection of the electrical conductor to a loudspeaker terminal.

33. (Previously Presented) The method of claim 28, further comprising electrically coupling the electrical conductor to a voice coil wire with a conductive adhesive, and applying a non-conductive adhesive between the woven spider and a coil former before the conductive adhesive has cured to cover the conductive adhesive and join the woven spider and the coil former.

34.-44 (Canceled)

45. (Previously Presented) The method of claim 28 and further comprising, after helically wrapping the electrical conductor around the selected non-conducting thread and before weaving the selected non-conducting thread, treating the selected non-conducted thread wrapped with the electrical conductor with a first substance to render the selected non-conducting thread relatively impervious to a second substance, and then, after weaving the selected non-conducting thread at the selected location in the woven cloth, treating the woven cloth with the second substance.

46. (Previously Presented) The method of claim 45, wherein treating the woven cloth with the second substance comprises treating the cloth with a phenolic resin.

47. (Previously Presented) A method of making a woven spider comprising selecting a non-conducting thread of a cloth from which the spider is to be woven, wrapping an electrical conductor around the selected non-conducting thread, weaving into the cloth the wrapped non-conducting thread to serve as part of the weave of the cloth, and after weaving the wrapped non-conducting thread into the cloth, forming the cloth into a woven spider.

48. (Previously Presented) The method of claim 47, where weaving the wrapped non-conducting thread further comprises weaving the wrapped non-conducting thread to serve as part of weave of the cloth in place of an unwrapped non-conducting thread.

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49. (Previously Presented) The method of claim 47, where weaving the wrapped non-conducting thread comprises placing the wrapped non-conducting thread at a flex locus of the cloth.

50. (Previously Presented) The method of claim 47, further comprising, after wrapping the electrical conductor around the selected non-conducting thread and before weaving the wrapped non-conducting thread into the cloth, treating the wrapped non-conducting thread with a first substance to render the wrapped non-conducting thread relatively impervious to a second substance, and then, after weaving the wrapped non-conducting thread into the cloth at a selected location, treating the cloth with the second substance.

51. (Previously Presented) The method of claim 50, where treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

52. (Currently Amended) The method of claim 47, further comprising incorporating the woven spider into a moving coil transducer and applying a conductive adhesive to at least one of:
the electrical conductor wrapped around the non-conducting thread, and
a lead of a moving coil of the moving coil transducer,
to make electrical contact with the moving coil transducer through the electrical conductor wrapped around the non-conducting thread, and to form a structural joint between the woven spider and the moving coil.

53. (Previously Presented) The method of claim 47, further comprising making electrical contact to a moving coil of a transducer with the electrical conductor wrapped around the non-conducting thread.

54. (Previously Presented) The method of claim 53, where making electrical contact comprises applying a conductive adhesive to at least one of the electrical conductor wrapped around the non-conducting thread and a lead of the moving coil to make electrical contact, and to form a structural joint between the spider and the moving coil.

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55. (Previously Presented) The method of claim 47, where forming the cloth into a woven spider comprises forming concentric convolutions in the cloth.

56. (Previously Presented) A method of making a moving coil transducer comprising wrapping an electrical conductor around a non-conducting thread and weaving the wrapped non-conducting thread into a single layer woven cloth at a single shed or course to form part of the single layer woven cloth, after weaving the wrapped non-conducting thread into the single layer woven cloth, forming the single layer woven cloth into a spider, incorporating the spider into a moving coil transducer and making electrical contact with the moving coil transducer through the electrical conductor wrapped around the non-conducting thread.

57. (Previously Presented) The method of claim 56, where weaving the wrapped non-conducting thread comprises weaving a first length of the wrapped non-conducting thread into the single layer woven cloth, positioning a second length of the wrapped non-conducting thread adjacent to the single layer of cloth to form a float, and weaving a third length of the wrapped non-conducting thread into the single layer woven cloth.

58. (Previously Presented) The method of claim 57, where forming the single layer woven cloth into a spider comprises forming a region of the single layer woven cloth that is adjacent the float as a perimeter of the spider.

59. (Currently Amended) The method of claim 56, where the step of wrapping the non-conducting thread with the electrical conductor comprises a further step of wrapping multiple non-conducting threads with multiple electrical conductors and the step of weaving the wrapped non-conductor thread comprises a further step of weaving the multiple wrapped non-conducting threads into the single layer woven cloth at a single shed or course of the single layer woven cloth.

60. (Previously Presented) The method of claim 59, further comprising, after wrapping multiple non-conducting threads with electrical conductors and before weaving the multiple wrapped non-conducting threads into the single layer woven cloth, twisting the multiple wrapped non-conducting threads together.

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61. (Previously Presented) The method of claim 56, further comprising, after wrapping the non-conducting thread with an electrical conductor and before weaving the wrapped non-conducting thread into the single layer woven cloth, treating the wrapped non-conducting thread with a first substance to render the wrapped non-conducting thread relatively impervious to a second substance, and then, after weaving the wrapped non-conducting thread at the selected location in the single layer woven cloth, treating the single layer woven cloth with the second substance.

62. (Previously Presented) The method of claim 61, where treating the single layer woven cloth with the second substance comprises treating the single layer woven cloth with a phenolic resin.

63. (Previously Presented) The method of claim 59, and further comprising, after wrapping the multiple non-conducting threads with multiple electrical conductors and before weaving the wrapped non-conducting threads into the single layer woven cloth, treating the wrapped non-conducting threads with a first substance to render the wrapped non-conducting threads relatively impervious to a second substance, and then, after weaving the wrapped non-conducting threads into the single layer woven cloth, treating the single layer woven cloth with the second substance.

64. (Previously Presented) The method of claim 63, wherein treating the single layer woven cloth with the second substance comprises treating the single layer woven cloth with a phenolic resin.

65. (Previously Presented) A method of making a woven spider comprising: with a plurality of non-conducting threads, weaving a cloth in a single layer; selecting at least one of the non-conducting threads; wrapping the at least one of the non-conducting threads with an electrical conductor; weaving the at least one of the non-conducting threads that is wrapped with the electrical conductor at a single shed or course of the cloth to form an integral part of a warp or a weft of the cloth.

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66. (Previously Presented) The method of claim 65, further comprising forming the cloth that includes the at least one of the non-conducting threads that is wrapped with the electrical conductor into a spider.

67. (Canceled)

68. (Previously Presented) The method of claim 65, where the at least one of the non-conducting threads that is wrapped with the electrical conductor is woven with another of the non-conducting threads to form the cloth.

69. (Previously Presented) The method of claim 65, further comprising after the at least one of the plurality of non-conducting threads that is wrapped with the electrical conductor is woven into and forms part of the weave of the cloth, forming the cloth into a spider.

70. (Previously Presented) The method of claim 69 further comprising incorporating the spider into a moving coil transducer and making electrical contact with the moving coil transducer through the electrical conductor wrapped around the at least one of the non-conducting threads.

71. (Previously Presented) The method of claim 65, where weaving the at least one of the non-conducting threads that is wrapped with the electrical conductor comprises weaving a first length of the at least one of the non-conducting threads at a single shed or course of the cloth to form an integral part of a warp or a weft of the cloth, positioning a second length of the at least one of the non-conducting threads that is wrapped with the electrical conductor adjacent to the cloth to form a float, and weaving a third length of the at least one of the non-conducting threads that is wrapped with the electrical conductor at a single shed or course of the cloth to form an integral part of a warp or a weft of the cloth.

72. (Previously Presented) The method of claim 71, further comprising forming the cloth into a spider and forming a region of the cloth that is adjacent the float as a perimeter of the spider.

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73. (Currently Amended) The method of claim 65, where the step of wrapping the at least one of the non-conducting threads with the electrical conductor comprises a further step of wrapping multiple non-conducting threads with multiple electrical conductors and the step of weaving the at least one of the non-conducting threads that is wrapped with the electrical conductor comprises a further step of weaving the multiple wrapped non-conducting threads at a single shed or course of the cloth to form an integral part of a warp or a weft of the cloth.

74. (Previously Presented) The method of claim 73, further comprising, after wrapping multiple non-conducting threads with multiple electrical conductors and before weaving the multiple wrapped non-conducting threads at a single shed or course of the cloth, twisting the multiple wrapped non-conducting threads together.

75. (Previously Presented) The method of claim 73, and further comprising, after wrapping the multiple non-conducting threads with multiple electrical conductors and before weaving the multiple wrapped non-conducting threads at a single shed or course of the cloth, treating the multiple wrapped non-conducting threads with a first substance to render the multiple wrapped non-conducting threads relatively impervious to a second substance, and then, after weaving the multiple wrapped non-conducting threads at a single shed or course of the cloth, treating the cloth with the second substance.

76. (Previously Presented) The method of claim 75, wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.